

I claim:

1. An expandable centralizer for centering a tool in a wellbore having an opening larger in diameter than the diameter of an opening through which the expandable centralizer can freely pass, the expandable centralizer comprising:

a body connectable in a workstring, said body having a bore defined therein running axially therethrough, said body including:

a first portion being substantially cylindrical in shape and having a substantially circular cross-section of a first diameter; and

a second portion being polyhedral in cross-section and having a plurality of faces disposed parallel to said bore;

a plurality of centralizing members, one of said centralizing members being located, respectively, on one of said faces; and

actuating means for moving said centralizing members from a first position within said first diameter to a second position wherein portions of said centralizing members are located outside said first diameter.

2. The expandable centralizer of Claim 1 wherein said second position is variable depending on said actuating means.

3. The expandable centralizer of Claim 1 wherein there are at least three centralizing members.

4. The expandable centralizer of Claim 2 wherein there are at least three centralizing members.

5. The expandable centralizer of Claim 3 wherein there is an odd number of centralizing members.

6. The expandable centralizer of Claim 4 wherein there is an odd number of centralizing members.

7. The expandable centralizer of Claim 4 wherein said faces are identical and are arranged equidistantly around said body.

8. The expandable centralizer of Claim 7 wherein there are three faces, wherein said second portion has a triangular cross-section, and wherein each face has an associated centralizing member arranged thereon.

9. The expandable centralizer of Claim 8 wherein each centralizing member includes a pivot point and each centralizing member is pivoted at said pivot point against its associated face.

10. The expandable centralizer of Claim 9 further including a spring located at each of said pivot points such that each member is returned to said first position from said second position on cessation of operation of said actuating means.

11. The expandable centralizer of Claim 2 wherein said actuating means is a piston, said piston having a leading end arranged for contacting a portion of each centralizing member, on actuation of said piston.

12. The expandable centralizer of Claim 10 wherein said actuating means is a piston, said piston having a leading end arranged for contacting a portion of each centralizing member, on actuation of said piston.

13. The expandable centralizer of Claim 12 wherein said piston is hydraulically actuated.

14. The expandable centralizer of Claim 13 wherein differential fluid pressure created in said workstring operates said piston.

15. The expandable centralizer of Claim 1 further including at least one intensifier, each intensifier having a first face disposed perpendicular to said bore, said first face of each intensifier having a surface area greater than said operating surface area of said piston.

16. The expandable centralizer of Claim 14 further including at least one intensifier, each intensifier having a first face disposed perpendicular to said bore, said first face having a surface area greater than said operating surface area of said piston.

17. The expandable centralizer of Claim 16 wherein each intensifier abuts a first face of a neighboring intensifier for providing a cascade of intensifiers, and wherein each intensifier is arranged to abut said operating surface area of an intensifier.

18. The expandable centralizer of Claim 1 wherein said second portion of said body is arranged on a cylindrical core for allowing said first and second portions to rotate independently of each other.

19. The expandable centralizer of Claim 17 wherein said second portion of said body is arranged on a cylindrical core for allowing said first and second portions to rotate independently of each other.